Name: Date:

PCW_09_22 Coordinate transformations v17

Question 1

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f[7x+6]-4}{5}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a,b) \rightarrow \left(\frac{a-6}{7}\;,\;\frac{b-4}{5}\right)$$

Question 2

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 2\cdot f[5\,(x+6)]+3$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a,b) \rightarrow \left(\frac{a}{5}-6\;,\;2b+3\right)$$

Question 3

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f\left[\frac{x}{2}+4\right]}{8}+5$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a,b) \rightarrow \left(2\,(a-4)\;,\;\frac{b}{8}+5\right)$$

PCW_09_22 Coordinate transformations v17

Question 4

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 4 \cdot (f[6x - 2] + 5)$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a + 2}{6} \;,\; 4\,(b + 5) \right)$$

Question 5

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; 3 \cdot f[6\,(x - 9)] - 2$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(\frac{a}{6} + 9 \;,\; 3b - 2 \right)$$

Question 6

Consider the two functions f and g, where g is defined as a transformation of f:

$$g[x] \;=\; \frac{f\left[\frac{x+7}{6}\right] + 8}{4}$$

For point (a, b) on curve f there is a corresponding point on the curve g. Write the coordinate transformation.

$$(a, b) \rightarrow \left(6a - 7 \;,\; \frac{b + 8}{4} \right)$$